KNN/Regularization (Q8L9)

57% (12/21)

✓ **1. The bias of an estimator (e.g. z^) equals...Hint: the OLS coefficients are unbias :)**

- (A) E(z^) - z
- (B) E(z^2) - [E(z)]^2
- (C) [E(z^2) - E(z)]^2
- (D) E(z^2)
- (E) I do not know

✓ **2. The main idea of regularization is**

- (A) To introduce a small amount of bias in order to have less variance.
- (B) To introduce a small amount of variance in order to have less bias.
- (C) To introduce a small amount of variance and bias in order to have less bias.
- (D) I do not know

✓ **3. How the tune of any parametr can be made**

- (A) using Cross validation
- (B) It is impossible
- (C) I do not now
- (D) using larger sample
- (E) only having population

✗ **4. The ridge coefficient estimates shrink towards zero**

- (A) when lambda increases
- (B) when lambda decreases
- (C) when lambda = 0
- (D) I do not know

✗ **5. Which one can shrink the slope all the way to 0?**

- (A) Lasso
- (B) Ridge
- (C) Regression
- (D) I do not know

✓ 6. When lambda = 0, we have

A Ridge
B Lasso
C EL
D Regression
E I do not know

✗ 7. When alpha = 0, we have

A Ridge
B Lasso
C EL
D Regression
E I do not know

✓ 8. Which function can help to perform cross-validation for regularization in R?

A cv.glmnet()
B cros_val()
C glmnet(method = "cv)
D I do not know

✓ 9. KNN is

A Data-driven
B Model-driven
C I do not now

✓ 10. KNN is

A parametric method
B non-parametric method
C I do not know

✗ 11. The dependent variable of the (OLS) regression is

A categorical
B ordinal
C continuous
D count
E I do not know

✓ 12. The dependent variable of the classification is

- (A) categorical
- (B) numeric
- (C) I do not know

✓ 13. How to chose K?

- (A) pick own
- (B) using cross-validation
- (C) the largest one
- (D) the smallest one

✓ 14. KNN can be used for regression

- (A) Yes
- (B) No
- (C) I do not know

✗ 15. In the case of KNN classification we use

- (A) average of outcomes
- (B) majority voting scheme
- (C) I do not know

✓ 16. Which of these errors will increase constantly by increasing k?

- (A) train error
- (B) test error
- (C) both
- (D) I do not know

✗ 17. This function can be used to perform KNN in R

- (A) knn()
- (B) k_nn()
- (C) knnreg()
- (D) knearneib()
- (E) I do not know

✗ 18. With the increase of k, the decision boundary will be

A simplified

B more complex

C I do not know

D unchanged

✗ 19. The best k correspond to

A the lowest point of test error

B the lowest point of train error

C the highest point of test error

D I do not know

✗ 20. KNN algorithm is sensitive to outliers

A True

B False

C I do not know

✓ 21. KNN

A is a supervised learning algorithm.

B is an unsupervised learning algorithm.

C I do not know